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10/743,095	12/23/2003	Colin C.O. Goble	117343	8013

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EXAMINER	
TOY, ALEX B	
ART UNIT	**PAPER NUMBER**
3739	

DATE MAILED: 10/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

AIT

Office Action Summary	Application No.	Applicant(s)	
	10/743,095	GOBLE, COLIN C.O.	
	Examiner	Art Unit	
	Alex B. Toy	3739	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 August 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3,5-28 and 55* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3,5-28 and 55* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *23 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *9/13/06*.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

This Office Action is in response to applicant's amendment filed on August 9, 2006. The objections to claims 1, 3-29, and 39 are withdrawn in view of applicant's amendment. All prior art rejections are maintained with respect to the pending claims.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., In re Berg, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); In re Goodman, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); In re Longi, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); In re Van Ornum, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); In re Vogel, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and In re Thorington, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1, 3, 5-28, and 55 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-21 of copending Application No. 11/032141. Although the conflicting claims are not identical, they are not patentably distinct from each other because the protection circuitry of

10/743095 serves the same function as the control circuit of 11/032141 to regulate the delivered RF power in response to various electrical parameters. In addition, both applications contain means for sensing said electrical parameters. Claim 14 of 11/032141 is merely a broader recitation of limitations in 10/743095.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1, 3, and 5-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cheng et al. (U.S. Pat. No. 6,235,020 B1) in view of Feucht (U.S. Pat. No. 5,067,953) in view of Malis (U.S. Pat. No. 4,590,934) and further in view of Harano et al. (U.S. PGPub 2002/0165530 A1).

Regarding claim 1, Cheng discloses an electrosurgical generator for supplying radio frequency (RF) power to an electrosurgical instrument for cutting or vaporizing tissue, wherein the generator comprises an RF output stage having:

at least one RF power device (Figs. 2-3),

at least one pair of output lines for delivering RF power to the instrument (Figs. 2-3), and

protection circuitry 300 responsive to a predetermined electrical condition indicative of an output current overload substantially to interrupt the RF power supplied to the output network (col. 17, ln. 39-65 and Fig. 5),

The claim differs from Cheng in calling for the generator to comprise a series-resonant output network coupled between the RF power device and the said pair of output lines. Feucht, however, teaches an electrosurgical generator comprising a series-resonant output network 50-53 coupled between the RF power device and the said pair of output lines to act as a filter to block excessively high frequencies (col. 6, ln. 63 – col. 7, ln. 1 and Figs. 1 and 3). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have included a series-resonant output network in the generator of Cheng in view of the teaching of Feucht to act as a filter to block excessively high frequencies.

The claim further differs from Cheng in calling for the output impedance of the output stage at the output lines to be less than 200/sqrt P ohms, where P is the maximum continuous RF output power of the generator in watts. Malis ('934), however, teaches a generator, wherein the output impedance of the output stage at the output

lines is less than 200/sqrt P ohms, where P is the maximum continuous RF output power of the generator in watts. On page 3 of the specification, applicant discloses that it is preferable to use a maximum power of 400 W for wet field surgery and 16 W for dry field surgery. This translates to an output impedance that is less than 10 ohms for wet field surgery and less than 50 ohms for dry field surgery. In accordance with claim 1, Malis et al. ('934) disclose an output impedance of approximately 5-10 ohms in order to maintain uniform power at the instrument tip over a wide range of load conditions, from dry tissue to heavily irrigated tissue (col. 2, ln. 7-20). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have made the output impedance of the generator of Cheng in accordance with claim 1 in view of the teaching of Malis ('934) in order to maintain uniform power at the instrument tip over a wide range of load conditions, from dry tissue to heavily irrigated tissue.

In addition, applicant has not disclosed any criticality or unexpected result that is associated with using the formula of 200/sqrt P. Applicant's specification recites various formulae but never discloses how or why they were derived. Malis ('934) clearly teaches the low output impedance range as claimed by applicant. That Malis teaches the claimed range shows that it is known to be both possible and advantageous to choose such a range. Furthermore, choosing this range allows consistent operation under a wide variety of conditions. Thus, in view of the teaching of Malis and applicant's failure to disclose any criticality, adjusting the output impedance to be low as claimed or any other value is deemed to be a mere optimization of an operational parameter that would require only routine skill in the art.

The claim further differs from Cheng ('020) in calling for the protection circuitry to be responsive to application of a short circuit across the output lines, and wherein the protection circuitry is responsive to the said short circuit sufficiently quickly to disable the RF power device before the current passing therethrough rises to a rated maximum current as a result of the short circuit. Harano, however, teaches an electrosurgical generator with protection circuitry 28 that is responsive to application of a short circuit across the output lines, and wherein the protection circuitry is responsive to the said short circuit sufficiently quickly to disable the RF power device before the current passing therethrough rises to a rated maximum current as a result of the short circuit to prevent unsafe or improper operation of the device (pg. 4, ¶ 67).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have made the protection circuitry of Cheng ('020) to be responsive to application of a short circuit across the output lines, and wherein the protection circuitry is responsive to the said short circuit sufficiently quickly to disable the RF power device before the current passing therethrough rises to a rated maximum current as a result of the short circuit in view of the teaching of Harano ('530) to prevent unsafe or improper operation of the device.

Regarding claim 3, Cheng ('020)/Feucht ('953)/Malis ('934) disclose the generator according to claim 1. The claim differs from Cheng ('020)/Feucht ('953)/Malis ('934) in calling for the protection circuitry to be responsive to application of a short circuit across the output lines, and wherein the series-resonant output network is such

that the rate of rise of the output current at the output lines when the short is applied is less than (sqrt P)/4 amps per microsecond. Harano, however, teaches an electrosurgical generator with protection circuitry 28 that is responsive to application of a short circuit across the output lines to prevent unsafe or improper operation of the device (pg. 4, ¶ 67). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have made the protection circuitry of Cheng ('020) to be responsive to application of a short circuit across the output lines in view of the teaching of Harano to prevent unsafe or improper operation of the device. Furthermore, since applicant has not disclosed any criticality or unexpected result for the particular value of (sqrt P)/4 amps per microsecond, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have configured the series-resonant output network of Cheng ('020)/Feucht ('953)/Malis ('934)/Harano ('530) to have this value.

Regarding claims 5 and 19-21, Cheng ('020)/Feucht ('953)/Malis ('934) disclose the generator according to claim 1. Cheng ('020)/Feucht ('953)/Malis ('934) further disclose the generator according to claim 4 in view of Harano ('530). Harano further discloses the generator, wherein the power device is disabled in response to the application of the short circuit to the output lines (pg. 4, ¶ 67). The claims differ from Cheng ('020) in calling for the disabling to occur in a time period corresponding to less than 3 (claims 5 and 20), 20 (claim 19), or 1 (claim 21) RF cycles of the delivered RF power. Harano, however, teaches continuously monitoring the output voltage in order to

automatically shutdown the power device in response to a short circuit (pg. 4, ¶ 67, 74). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have made the protection circuitry of Cheng ('020) able to continuously monitor the output voltage in view of the teaching of Harano in order to automatically shutdown the power device in response to a short circuit. As a result, the device of Cheng ('020)/Feucht ('953)/Malis ('934)/Harano ('530) is in accordance with the time periods of claims 5 and 19-21.

In addition, applicant has disclosed no other criticality for the time period corresponding to less than 1, 3, or 20 RF cycles other than to prevent a short circuit across the power device and excessively high RF current. The generator of Cheng ('020)/Feucht ('953)/Malis ('934)/Harano ('530) is capable of preventing a short circuit across the power device and excessively high RF current in response to a short circuit across the output lines. Therefore, the generator of Cheng ('020)/Feucht ('953)/Malis ('934)/Harano ('530) is in accordance with claims 5 and 19-21.

Regarding claim 6, Cheng ('020)/Feucht ('953)/Malis ('934)/Harano ('530) disclose the generator according to claim 1. In addition, Cheng discloses the generator wherein, the predetermined electrical condition is indicative of an instantaneous current in the output stage exceeding a predetermined level, and wherein the speed of response of the protection circuitry is such that the said condition is detected within the RF cycle during which the instantaneous current exceeds the said level (col. 17, ln. 39-65).

Regarding claim 7, Cheng ('020)/Feucht ('953)/Malis ('934)/Harano ('530) disclose the generator according to claim 1. In addition, Cheng discloses the generator including:

a power supply stage coupled to the RF output stage, the power supply including a charge-storing element for supplying power to the power device or devices and a current-sensing circuit 302 arranged to sense the current supplied to the RF output stage by the charge-storing element (Figs. 3 and 5); and

a pulsing circuit 300 coupled to the current sensing circuit for pulsing the or each power device, the arrangement of the current sensing and pulsing circuits being such that the timing of the pulses is controlled in response to the sensed current (col. 17, ln. 39-65).

Cheng further discloses that the current sensors may be voltage sensors instead (col. 22, ln. 45-46).

Regarding claim 8, Cheng ('020)/Feucht ('953)/Malis ('934)/Harano ('530) disclose the generator of claims 1 and 7. The claim differs from Cheng in calling for the voltage sensing circuit and the pulsing circuit to be arranged to terminate individual pulses of RF energy delivered by the RF power device or devices when the sensed voltage falls below a predetermined level. Harano et al. ('530), however, teach an electrosurgical generator wherein the voltage sensing circuit is arranged to terminate RF energy delivered by the RF power device or devices when the sensed voltage falls below a predetermined level to prevent operation when there is a short circuit (pg. 4, ¶

67). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have arranged the voltage sensing circuit and the pulsing circuit in the generator of Cheng to terminate individual pulses of RF energy delivered by the RF power device or devices when the sensed voltage falls below a predetermined level also in view of the teaching of Harano et al. ('530) in order to prevent operation when there is a short circuit.

Regarding claim 9, Cheng ('020)/Feucht ('953)/Malis ('934)/Harano ('560) disclose a generator according to claims 1, 7, and 8, wherein the predetermined level is set such that the pulse termination occurs when the voltage falls to or lower than a predetermined level. The claim differs from Cheng in calling for the predetermined level to be when the voltage falls by a predetermined percentage value of between 5 percent and 20 percent. Harano, however, teaches that the operator may set control parameters of the minimum and maximum voltages to any desired value (pg. 4, ¶ 70). Therefore, it would have been an obvious and required only routine skill in the art at the time the invention was made to have made the predetermined level of Harano et al. ('530) to be when the voltage falls by a predetermined percentage value of between 5 percent and 20 percent. Applicant, furthermore, has not disclosed any criticality or unexpected result associated with this value that defines over the inherent capability of the device of Harano.

Regarding claim 10, see the preceding rejection of claim 9.

Regarding claim 11, Cheng ('020)/Feucht ('953)/Malis ('934)/Harano ('530) disclose the generator of claims 1 and 7. In addition, Cheng discloses the generator, wherein the power supply and pulsing circuit are arranged to generate a pulsed RF output signal at the output terminals (col. 17, ln. 39-65), which signal has a peak current of at least 1 A (col. 17, ln. 56-57), a simultaneous peak voltage of at least 300 V (col. 14, ln. 54-58), and a pulse length of between 100 microseconds and 5 ms (col. 17, ln. 7-17). Since Cheng discloses that the current limit may be set at any desired level, the generator of Cheng is inherently capable of delivering power with the current and voltage as claimed. Regarding the modulation rate of between 5 Hz and 2 kHz, Cheng discloses a higher rate of 5 kHz, but it would have been obvious and required only routine skill in the art to arrange the generator to have a modulation rate of between 5 Hz and 2 kHz or any other desired value.

Regarding claim 12, Cheng ('020)/Feucht ('953)/Malis ('934)/Harano ('530) disclose the generator of claims 1, 7, and 11. In addition, Cheng discloses the generator, wherein the pulse length is between 0.5 ms and 5 ms (col. 20, ln. 7-17).

Regarding claim 13, Cheng ('020)/Feucht ('953)/Malis ('934)/Harano ('530) disclose the generator of claims 1, 7, and 11. In addition, Cheng discloses the generator, wherein the pulse duty cycle is between 1% and 20% (col. 17, ln. 50-52).

Regarding claim 14, Cheng ('020)/Feucht ('953)/Malis ('934)/Harano ('530) disclose the generator of claims 1, 7, and 11. In addition, Cheng discloses the generator, wherein the power supply and pulsing circuit are arranged to generate a pulsed RF output signal at the output terminals (col. 17, ln. 39-65), which signal has a peak voltage of at least 300 V throughout the entire pulse length (col. 14, ln. 54-58).

Regarding claim 15, Cheng ('020)/Feucht ('953)/Malis ('934)/Harano ('530) disclose the generator of claims 1, 7, and 11. In addition, Cheng discloses the generator, wherein, in a subsequent period, the generator generates a constant power RF output signal at the output terminals (col. 17, ln. 39-65).

Regarding claim 16, Cheng ('020)/Feucht ('953)/Malis ('934)/Harano ('530) disclose the generator according to claim 1. In addition, Cheng discloses a generator for supplying radio frequency (RF) power to an electrosurgical instrument for cutting or vaporizing tissue in wet field electrosurgery (col. 3, ln. 41-46 and col. 15, ln. 53-54). The claim differs from Cheng in calling for the output impedance of the output stage at the output lines to be less than 10 ohms. Malis et al. ('934), however, teach an output impedance of approximately 5-10 ohms in order to maintain uniform power at the instrument tip over a wide range of load conditions, from dry tissue to heavily irrigated tissue (col. 2, ln. 7-20). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have made the output impedance of the generator of Cheng less than 10 ohms in view of the teaching of Malis ('934) in order to

maintain uniform power at the instrument tip over a wide range of load conditions, from dry tissue to heavily irrigated tissue.

Regarding claim 17, Cheng ('020)/Feucht ('953)/Malis ('934)/Harano ('530) disclose the generator according to claim 1. In addition, Cheng discloses a generator for supplying radio frequency (RF) power to an electrosurgical instrument for cutting or vaporizing tissue in dry field electrosurgery (col. 3, ln. 41-46 and col. 15, ln. 53-54), since the device of Cheng is inherently capable of use in dry field electrosurgery. The claim differs from Cheng in calling for the output impedance of the output stage at the output lines to be less than 50 ohms. Malis et al. ('934), however, teach an output impedance of approximately 5-10 ohms in order to maintain uniform power at the instrument tip over a wide range of load conditions, from dry tissue to heavily irrigated tissue (col. 2, ln. 7-20). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have made the output impedance of the generator of Cheng less than 50 ohms in view of the teaching of Malis ('934) in order to maintain uniform power at the instrument tip over a wide range of load conditions, from dry tissue to heavily irrigated tissue.

Regarding claim 18, Cheng ('020)/Feucht ('953)/Malis ('934)/Harano ('530) disclose the generator according to claim 1. The claim differs from Cheng in calling for the output impedance to be less than 100/sqrt P ohms. Malis et al., however, teach a generator, wherein the output impedance is less than 100/sqrt P ohms. On page 4 of

the specification, applicant discloses that it is preferable to use a maximum power of 400 W for wet field surgery and 16 W for dry field surgery. This translates to an output impedance that is less than 5 ohms for wet field surgery and less than 25 ohms for dry field surgery. Malis et al. teach an output impedance of approximately 5-10 ohms for wet field or dry field surgery (col. 2, ln. 7-13). Since this is an approximate value, it includes values slightly below 5 ohms, which is in accordance with claim 18. In addition, applicant has not disclosed any criticality or unexpected result that is associated with using the formula of 100/sqrt P.

Regarding claim 22, Cheng ('020)/Feucht ('953)/Malis ('934)/Harano ('530) disclose the generator according to claim 1. In addition, Cheng discloses a generator having an RF source coupled to the power device, the source defining the operating frequency of the generator (col. 15, ln. 53-57). The claim differs from Cheng in calling for the series-resonant output network to be tuned to the operating frequency. Feucht, however teaches a the series-resonant output network that is tuned to the operating frequency in order to allow its use in high frequency surgery devices (col. 6, ln. 63-68). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have tuned the series-resonant output network of Feucht in view of Cheng to the operating frequency further in view of the teaching of Feucht in order to facilitate the use of the series-resonant network in the high frequency device of Cheng.

Regarding claim 23, Cheng ('020)/Feucht ('953)/Malis ('934)/Harano ('530) discloses the generator according to claims 1 and 22. In addition, applicant has not disclosed any criticality or unexpected result associated with a substantially constant operating frequency. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have operated the generator of Cheng at a substantially constant operating frequency as matter of routine skill in the art.

Regarding claim 24, Cheng ('020)/Feucht ('953)/Malis ('934)/Harano ('530) disclose the generator according to claim 1. In addition, Cheng ('020)/Feucht ('953)/Malis ('934) disclose the generator further comprising protection circuitry 300 which has a current sensing circuit 302 including a pick-up arrangement coupled in series between the power device and the series-resonant output network, a comparator having a first input coupled to the pick-up arrangement and a second input coupled to a reference level source, and disabling circuitry coupled to an output of the comparator to disable the power device when the comparator output changes state in response to the instantaneous current sensed by the pick-up arrangement exceeding the predetermined level as set by the reference level source (Cheng: col. 17, ln. 39-65).

Regarding claim 25, Cheng ('020)/Feucht ('953)/Malis ('934)/Harano ('530) disclose the generator according to claim 1. In addition, Cheng discloses the generator, further comprising protection circuitry which includes a monostable stage and is operable, in response to detection of the said predetermined condition, to disable the

power device for a limited period determined by a time constant of the monostable stage, the time constant corresponding to less than 20 cycles of the operating frequency of the generator (col. 17, ln. 39-65). Applicant has disclosed no other criticality or unexpected result for the time period corresponding to less 20 cycles other than to protect the RF power device. Since the device of Cheng automatically disables the power device for a time period sufficient to protect it from over current, it is in accordance with claim 25.

Regarding claim 26, Cheng ('020)/Feucht ('953)/Malis ('934)/Harano ('530) disclose the generator according to claim 1. In addition, Malis et al. ('934) teaches a generator, wherein the RMS RF output voltage is substantially constant within a load impedance range of from 600/sqrt P ohms to 1000 ohms. On page 4 of the specification, applicant discloses that it is preferable to use a maximum power of 400 W for wet field surgery and 16 W for dry field surgery. This translates to load impedance ranges of 30-1000 ohms for wet field surgery and 150-1000 ohms for dry field surgery. In accordance with claim 26, Malis et al. ('934) disclose a generator, wherein the RMS RF output voltage is substantially constant within a load impedance range of 0-5000 ohms under wet or dry conditions (col. 5, ln. 26-35 and col. 2, ln. 7-11). Therefore, it would have been obvious to one of ordinary skill in the art at the invention was made to have designed the generator of Cheng to have a constant RMS RF output voltage as claimed in view of the teaching of Malis ('934) to allow the instrument to have a constant power output under wet or dry conditions.

Regarding claim 27, see the rejections of claims 1 and 3.

Regarding claim 28, see the rejections of claims 5 and 27.

Claim 55 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cheng ('020)/Feucht ('953)/Malis ('934)/Harano ('530) and further in view of Muri (U.S. Pat. No. 5,776,215).

Regarding claim 55, see the rejection of claim 20. The claim differs from Cheng ('020)/Feucht ('953)/Malis ('934)/Harano ('530) in calling for the active electrode to be formed as a conductive loop. Muri, however, teaches forming the active electrode as a conductive loop (Fig. 1). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have formed the active electrode of Cheng ('020)/Feucht ('953)/Malis ('934)/Harano ('530) as a conductive loop in view of the teaching of Muri as an obvious alternate electrode shape that is well-known in the art.

Response to Arguments

Applicant's arguments have been fully considered but they are not persuasive.

Regarding independent claims 1 and 27, applicant argues that Harano is silent with respect to the speed with which control circuit 28 is capable of stopping the high output power. Harano, however, discloses automatically stopping output power in response to detecting a short-circuit (pg. 4, ¶ 67-74). This indicates that the control

circuit 28 of Harano is continuously monitoring the output voltage to immediately shut down the output power in response to detecting the short-circuit.

Furthermore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have minimized the response time so that the RF power device is disabled before the current passing therethrough rises to a rated maximum current because one of ordinary skill in the art clearly wants to prevent the ill effects of a short-circuit. In addition, applicant has not pointed out any structure in the claimed invention that would: define over the protection circuitry of Harano, indicate that the protection circuitry of Harano is incapable of performing the claimed function, or render it non-obvious to optimize the protection circuitry Harano to perform the claimed function.

Applicant also argues that there is no teaching or suggestion in Harano, Cheng, Feucht, or Malis that the control circuit 28 of Harano may be used in a low output impedance device with a series resonant output circuit. In response to this argument, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

In this case, Harano is used to teach the obviousness of the claimed protection circuitry. The examiner is not suggesting putting the protection circuitry of Harano

directly in the device of Cheng. In view of the teaching of Harano, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used protection circuitry as claimed.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alex B. Toy whose telephone number is (571) 272-1953. The examiner can normally be reached on Monday through Friday, 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Linda C.M. Dvorak can be reached on (571) 272-4764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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